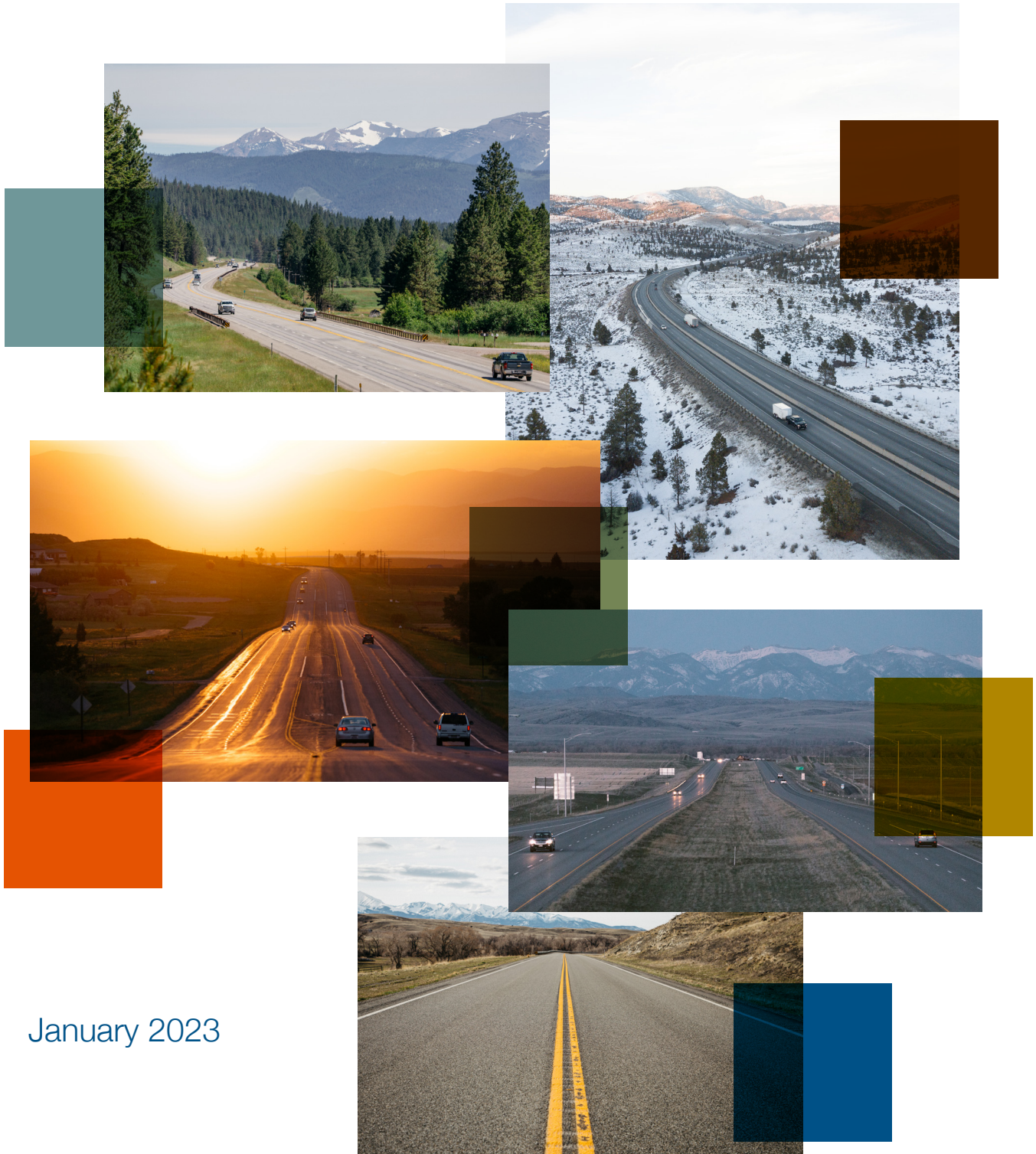


2022 ANNUAL REPORT

for the

Montana Department of Transportation
Research Programs



January 2023

prepared for

THE STATE OF MONTANA DEPARTMENT OF TRANSPORTATION

in cooperation with

THE U.S. DEPARTMENT OF TRANSPORTATION
FEDERAL HIGHWAY ADMINISTRATION

January 2023

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**Montana Department of Transportation
State Planning and Research (SPR) Part II Program:
Federal Fiscal Year 2022 Annual Report**

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Introduction

The Montana Department of Transportation (MDT) Statewide Planning and Research (SPR) Part II Program is authorized and funded through the Code of Federal Regulations, Title 23, Part 420, Subpart B (SPR-B). This program is administered through the Research Program Section in the Engineering Operations Bureau of the Highways and Engineering Division and funds projects that have been initiated to address specific research needs at MDT. SPR Part II funding can be used to research and evaluate new technologies that relate to design, construction, maintenance, and operation of all surface transportation modes. Other eligible uses include technology transfer and certain training activities.

Each year, MDT develops a program that includes projects that are either 80% federally funded or 100% federally funded. The program also includes funding for various national research initiatives, such as the American Association of State Highway and Transportation Officials (AASHTO), Transportation Pooled Fund (TPF) studies, Technical Service Programs (TSPs), Transportation Research Board (TRB), and National Cooperative Highway Research Program (NCHRP). The program is reviewed and approved by the Federal Highway Administration (FHWA) Montana Division Office prior to implementation. This annual report covers the MDT SPR Part II Program for Federal Fiscal Year (FFY) 2022, which is October 1, 2021, through September 30, 2022.

Fiscal Summary

MDT's SPR-B funding allocation for FFY 2022 was \$2,366,387. Participation in pooled funds and TSPs and contributions to TRB Core Services and NCHRP are 100% federally funded. Individual research projects are funded with 80% federal/20% state funds.

Through the SPR-B funded research focus area, MDT participates in and funds the following:

- Local Technical Assistance Program (LTAP) – \$80,000 (80% federal)
- TRB Core Services – \$124,928 (100% federal)
- AASHTOWare Project Data Analytics – \$277,000 (100% federal)
- NCHRP – \$281,132 (100% federal)

Figure 1 shows MDT's SPR-B funding allocations in FFY 2022.

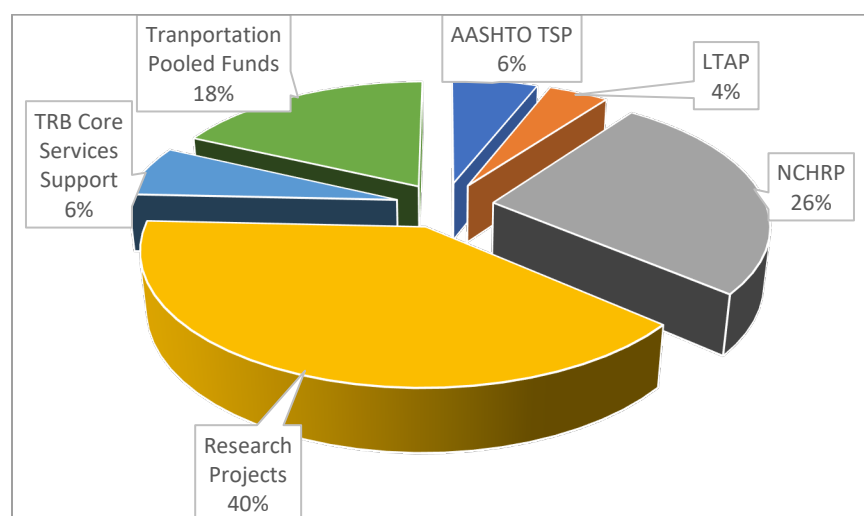


Figure 1. MDT SPR-B Funding Allocations (FFY 2022)

Program Summary

The MDT Research Program Section has three focus areas: research projects, experimental features, and the MDT Library:

Research Projects: This focus area fulfills FHWA expectations for transportation research. Research funds are used for individual research projects, participation in TPF studies, and participation in several AASHTO TSPs. Funding for TRB Core Services and NCHRP also comes from SPR-B funds.

Experimental Features: This focus area implements and evaluates products and practices new to Montana. Experimental features do not receive SPR-B funding but are funded via federal aid project programs. While not funded through SPR-B, experimental features are summarized in this report to round out the Research Program Section's roles at MDT.

MDT Library: The MDT Library and Librarian support MDT's information needs with a physical and digital library collection and on-demand reference services. The MDT Librarian also assists with technology transfer efforts that share the results of completed research.

Research Projects

The MDT Research Program Section manages individual Montana-specific research projects. In the spring, MDT requests research ideas. Ideas that address a unique question specific to Montana are developed into research projects. Each research project has a Technical Panel composed of subject matter experts who guide the research. When a research project concludes, implementation steps are identified to help MDT put the research into action.

Active research projects cover a range of topics that are important in highway planning, design, construction, and maintenance. Figure 2 shows the subject range for the 19 projects that were active in FFY 2022.

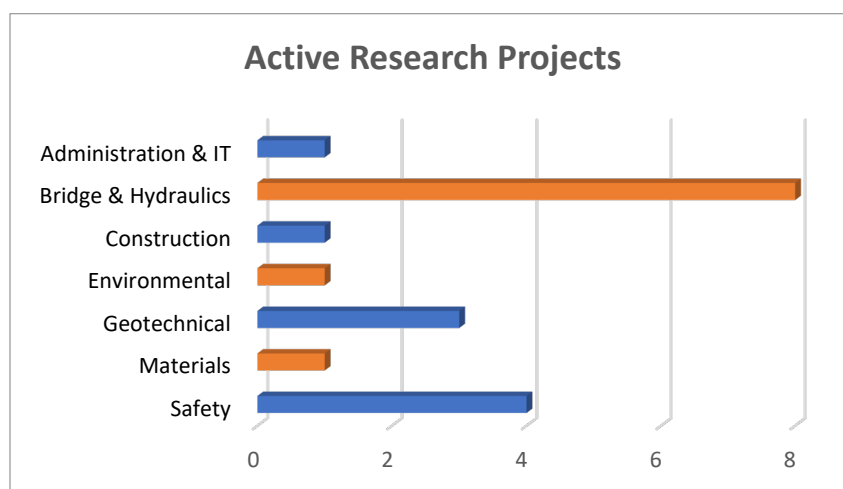


Figure 2. Number of Active Research Projects by Subject Area (FFY 2022)

[Appendix A](#) provides a summary of the MDT research projects that were active during FFY 2022.

The research projects focus area also supports MDT's involvement in pooled funds and TSPs. Table 1 identifies MDT's contributions to these programs during FFY 2022.

Table 1. MDT Contributions to TPFs and TSPs (FFY 2022)

Transportation Pooled Funds¹	
Total Commitment FFY 2022: \$337,520 (100% Federal)	
1.	TPF-5(353), Clear Roads Phase II – \$25,000
2.	TPF-5(376), Northwest Passage Phase IV – \$25,000
3.	TPF-5(385), Pavement Structural Evaluation with Traffic Speed Deflection Devices (TSDDs) – \$45,000
4.	TPF-5(394), Western Maintenance Partnership Phase 3 – \$5,000
5.	TPF-5(399), Improve Pavement Surface Distress and Transverse Profile Data Collection and Analysis, Phase II – \$15,000
6.	TPF-5(437), Technology Transfer Concrete Consortium – \$12,000
7.	TPF-5(309)/(444), Traffic Safety Culture: Phase 2 – \$25,000 ²
8.	TPF-5(447), Traffic Control Device Consortium – \$10,000
9.	TPF-5(454), Updating U.S. Precipitation Frequency Estimates for the Northwest – \$133,520
10.	TPF-5(476), Western Alliance for Quality Transportation Construction (WAQTC) – \$12,000
11.	TPF-5(480), Building Information Modeling (BIM) for Infrastructure – \$30,000
AASHTO Technical Service Programs³	
Total Commitment FFY 2022: \$102,500 (100% Federal)	
1.	AI (AASHTO Innovation Initiative) – \$6,000
2.	re:source – \$26,500
3.	DAMS (Development of AASHTO Materials Standards) – \$10,000
4.	EMTSP (Equipment Management Technical Services Program) – \$5,000
5.	LRFDMS (Load and Resistance Factor Design Bridges and Structures Specifications Maintenance) – \$15,000
6.	NTPEP (National Transportation Product Evaluation Program) – \$20,000
7.	TSP2 (Transportation System Preservation Technical Services Program) – \$20,000

¹ See the [TPF website](#) for project details.

² MDT is the project manager for the Traffic Safety Culture pooled fund; specific projects for the pooled fund are listed in [Appendix A](#).

³ See the [AASHTO TSP website](#) for service details.

Experimental Features

MDT encourages innovation in highway design and construction. Experimental features built under the Experimental Features program are eligible for federal funding participation, which is typically provided for more proven and conventional items. The incorporation of experimental features into construction and maintenance projects allows for a vital field evaluation of new materials, processes, and methods for determining the implementation value based on constructability, cost effectiveness, and performance. Among the benefits of this program is the federal financial assistance provided for the repair or replacement of an experimental feature that fails prematurely.

An experimental feature must meet two criteria to qualify for federal funding:

- Must have potential benefits to the highway agency or public.
- MDT personnel must track use of the feature with a documented evaluation of how it performed.

FHWA's Federal Aid Highway Program Manual Volume 6, Chapter 4, Section 2, Subsection 4 describes an experimental feature as "a material, process, method, equipment item, traffic operational device or other feature that:

- Has not been sufficiently tested under actual service conditions to merit acceptance without reservation in normal highway construction, or
- Has been accepted but needs to be compared with alternative acceptable features before determining their relative merits and cost effectiveness."

Anyone involved in a federal aid project can recommend an experimental feature. The experimental feature is documented in project documents and plans and communicated to the construction team via the contract.

The following resources are developed to support an experimental feature:

- *Website*. Each experimental feature has its own website that describes the feature and provides access to project reports.
- *Work Plan*. Created during the preconstruction design stage, the work plan describes the experimental feature, why it was selected for the project, why it is experimental, the measures of effectiveness or success, and how long the feature will be evaluated.
- *Construction Report*. Following construction, a report is created to document the as-built experimental feature. This report includes information from the work plan, construction documentation, and established baseline evaluation conditions.
- *Progress Updates and Final Progress Reports*. Progress of the experimental feature is observed over time and progress update and final progress reports are created to document performance, wear, or other identified characteristics to evaluate success. A final performance report is created after the performance review period concludes and posted to the feature's website.

After evaluation and dependent on the results, the experimental feature may be evaluated again on a different project, become standard practice, or be used by designers in future projects. MDT may also conclude that the feature does not fit agency needs if the feature did not perform as expected or failed.

The Research Program Section is currently monitoring 24 experimental features constructed on federal aid highway projects. In FFY 2022, three projects were constructed that included experimental features: (**bolded text** is the experimental feature)

- MT-21-03, **Geogrid Soil Stabilization** on Hardin – South, STPS 313-1(17)1[5793], Billings District
- MT-21-05, **Polymer Overlay** on PCCP on SF 139 – Dern/Spring Cr Reconstruct, HSIP-NH-1-2(193)118[8626], Missoula District
- MT-22-02, **Asphalt Paving Fiber** on Grandview Dr – Reserve Dr, NH 5-3(154)115[9862], Missoula District *

* This project will be monitored and reported with Experimental Feature MT-18-03.

[Appendix B](#) includes a summary of the federal aid projects completed since 2017 that included an experimental feature. This summary provides links to the websites that support the experimental features. Visit the MDT Research Program Section's [Experimental Features website](#) for additional information and up-to-date project reports.

MDT Library

The MDT Library provides a core service to the department throughout the year and serves as a center for employees seeking information. The library facilitates information exchange through a departmentally targeted weekly bulletin that highlights recently published research around the world. The MDT Librarian offers new employee orientation sessions and individual, tailored trainings to help staff utilize the library's resources, and maintains an in-depth online library training course on the MDT Moodle site. Together, these ongoing efforts create a range of opportunities for employees to engage with library services and materials in a meaningful way.

A leader in the Montana library community, the MDT Librarian is focused on continuous learning through participation in and contributions to national workgroups and committees. She is committed to bringing back new ideas from workshops and meetings:

- The MDT Librarian attended the following in-person meetings:
 - AASHTO Research Advisory Committee (RAC) summer meeting in Newton, MA
 - Special Library Association (SLA) annual meeting in Charlotte, NC
- The MDT Librarian participates remotely in the following periodic meetings throughout the year:
 - AASHTO RAC Region 4 meetings
 - Montana Shared Catalog member and executive board meetings
 - Montana state special librarians' roundtables
 - National Transportation Knowledge Network (NTKN) Communities of Practice meetings
 - Transportation Librarian Roundtables

When MDT staff have transportation questions, they know that the library is a reliable resource. The statistics below demonstrate how MDT staff used the library and the information sharing that occurred during the fiscal year:

- **201 reference questions.** The librarian responded to 201 individual reference questions. Of these, 116 were answered in less than five minutes, requiring no additional research from the librarian.

Eight-five reference questions required some level of research or information access, including interlibrary loans, literature searches, or tutorials. The MDT Librarian conducted 17 in-depth literature searches for MDT staff during FFY 2022.
- **288 library users registered.** When MDT hires new employees, they are assigned library cards upon hire and accounts are purged after termination. In addition to assigning new employees library cards, the MDT Librarian attends New Employee Orientation (NEO), offered to all new employees. NEO allows the MDT Librarian to introduce new employees to the library's services.
 - **Fun fact:** The MDT Librarian presented at three NEO sessions during FFY 2022.
- **323 titles cataloged.** To support MDT staff's daily work and professional development, 323 new publications were added to the MDT Library. Most titles were TRB publications, but many others were in support of employees' professional development through exam preparation or leadership studies.
- **459 items removed from the collection.** The library is no exception when it comes to decreasing clutter. Over 450 outdated items were removed from the collection during the fiscal year. Using a defined process, the removal or "weeding" effort was primarily carried out by the library's

summer intern. This large-scale project focused on professional development and management books, making room for more modern publications.

The MDT Library catalog is the primary access point for electronic resources with access limited to MDT staff. One of the most-used segments of the library's collection are the manuals used to repair MDT's large, valuable fleet of specialized maintenance vehicles. These manuals are stored in the library and accessed by mechanics across the state. The need for this resource is demonstrated by the library's top keyword search—"MDT equipment"—which leads users to this collection of specialized manuals.

Between October 1, 2021, and June 30, 2022 (the most recent data collected), the MDT Library catalog was visited 1,027 times by 753 users who performed 1,618 searches. The large volume of catalog searches, along with keyword search data, indicates that electronic resources represented the largest circulating portion of MDT Library resources during this period.

The MDT Library brings value to the department's daily operation with a collection of nearly 30,500 items (see Figure 3). This modern library includes over 8,800 items only available in an electronic format, including electronic reports and web-only documents. The library's OverDrive collection of professional development e-books and audiobooks contains over 400 titles, including 58 newly procured titles. Offering e-books allows the library to own several copies of many popular titles, which saves shelf space and permits more than one person to check out the same publication at the same time. The library's OverDrive service has also enhanced management training courses by offering attendees access to books referenced or required by the training at limited cost to MDT.

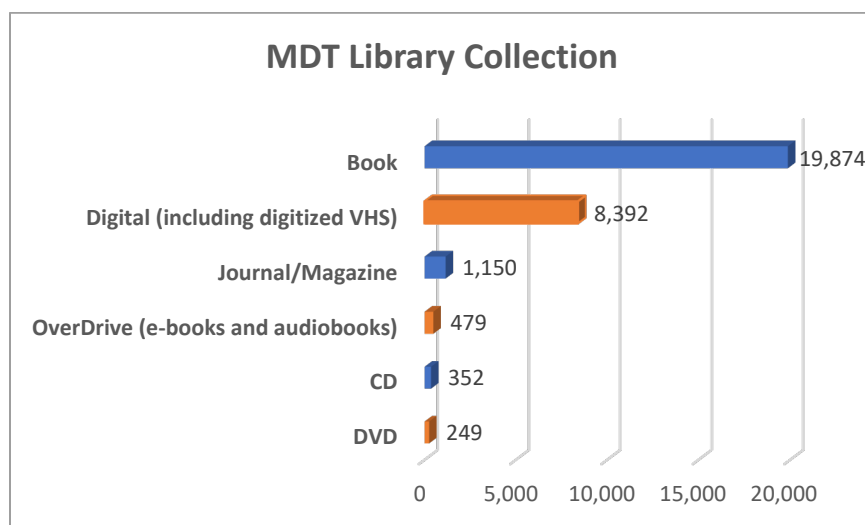


Figure 3. MDT Library Collection by Material Type (FFY 2022)

MDT employees checked out 473 items during the FFY 2022. This does not include any materials accessed digitally through the online catalog or subscription databases. Of the 473 items that circulated, most were OverDrive e-books or audiobooks, followed by physical copies of books. Figure 4 shows the types of library materials that circulated last year. Looking forward, the MDT Library is focusing on digital material access, including expanding the OverDrive collection.

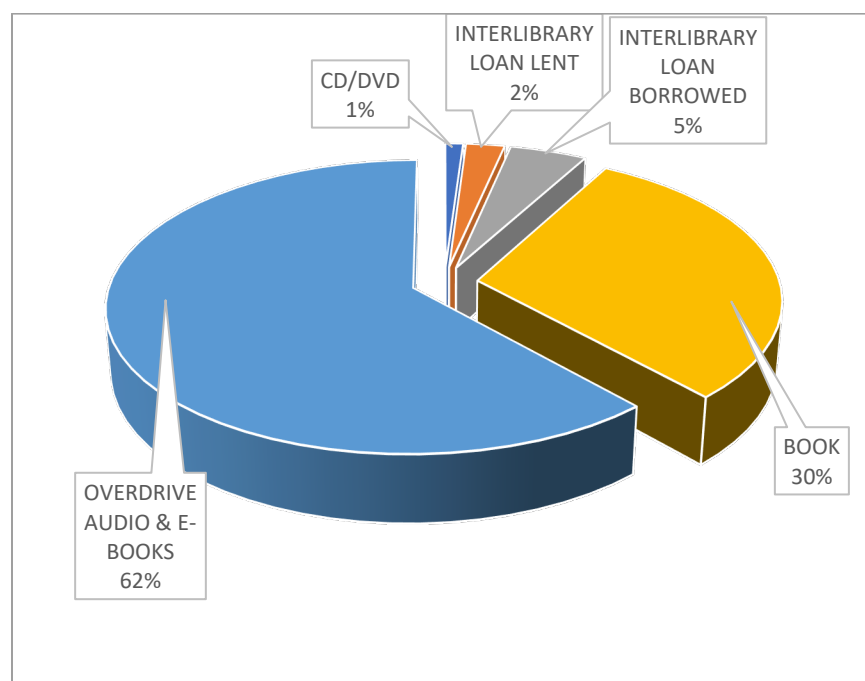


Figure 4. Circulation of MDT Library Materials (FFY 2022)

Research Program Section Highlights

The following highlights key accomplishments of the Research Program Section during FFY 2022:

- Received AASHTO RAC High Value Research Supplemental Topic recognition for two projects:
 - [Effective Production Rate Estimation and Activity Sequencing Logics Using Daily Work Report Data: Phases 1 and 2](#)
 - [Testing Wildlife-Friendly Fencing Modifications to Manage Wildlife and Livestock Movements](#)
- Involved 39 MDT professionals on research project Technical Panels for a total of 230 hours.
- Completed six research projects with current and previous years' expenditures of approximately \$572,541 (total is 80% SPR-B funded/20% state funded).
- Received 19 ideas for new research projects and approved five for an estimated funding amount of \$888,000 (total is 80% SPR-B funded/20% state funded).
- Cooperated with the MDT Rail, Transit, and Planning Division to create and submit the FFY 2022 SPR Part II work program and received FHWA approval on September 23, 2021.
- Attended the in-person TRB Annual Meeting held January 2022 in Washington, D.C.
- Joined over 30 other state research project managers at the in-person annual RAC meeting held July 23-26, 2022, in Newton, MA.
- Employed a summer student intern to assist in the MDT Library.
- Supported the participation of several MDT Research Program Section staff members in AASHTO RAC meetings throughout the year to contribute to the national research agenda and processes. These meetings have included periodic AASHTO RAC chats and Region 4 collaboration and business meetings.

- Recorded 29,020 visitors accessing the external MDT Research page; 23,233 of these visitors were new to the site. The most visited link on the MDT Research page was the [Resources for Growing Communities, Financing Districts—Resort and Local Option Taxes](#) page, at 1,550 users. The main research landing page recorded 1,102 visits.

Appendix A

MDT-Sponsored Research Projects

Bridge and Hydraulics Research Projects

Project Number	Title	Consultant	Start Date	End Date	Programmed Cost
9630-700	Concrete-Filled Steel Tube to Concrete Pile Cap Connections: Further Evaluation/Improvement of Analysis/Design Methodologies (Phase IV-V)	Montana State University	7/10/2018	3/31/2024	\$241,000
9831-765	Development of Deterioration Curves for Bridge Elements in Montana	Montana State University	8/5/2019	12/31/2022	\$83,000
9757-705	Evaluation of Thin Polymer Overlays for Bridge Decks	Wiss, Janney, Elstner and Associates	1/22/2020	3/31/2023	\$95,000
10000-844	Exploration of UHPC Applications for Montana Bridges	Montana State University	8/1/2021	10/31/2023	\$178,000
9925-818	Feasibility of Non-Proprietary Ultra-High Performance Concrete (UHPC) for Use in Highway Bridges in Montana: Implementation	Montana State University	12/10/2020	4/30/2023	\$114,000
9890-784	A Feasibility Study of Road Culvert Bridge Deck Deicing Using Geothermal Energy	Montana State University	7/13/2020	12/31/2023	\$235,000
9696-700	Bridge Deck Cracking Evaluation	Wiss, Janney, Elstner and Associates	8/6/2019	1/31/2022	\$225,686 (final cost)
9790-727	Monitoring Streamflow Using Video Cameras	United States Geological Survey	8/5/2019	1/31/2022	\$153,600
10336-933	Significant Factors of Bridge Deterioration	TBD	TBD	TBD	\$109,280
9353-511	Use of Fiber-Reinforced Polymer Composites for Bridge Repairs in Montana	TBD	TBD	TBD	\$287,907

Construction Research Projects

Project Number	Title	Consultant	Start Date	End Date	Programmed Cost
9929-819	Artificial Intelligence (AI) based Tool to Estimate Contract Time	Texas Transportation Institute	8/4/2021	5/31/2023	\$145,000

Environmental Research Projects

Project Number	Title	Consultant	Start Date	End Date	Programmed Cost
9923-808	Effective Wildlife Fences Through Better Functioning Barriers at Access Roads and Jump-Outs	Montana State University	12/20/2020	8/31/2023	\$67,000
5896-423	MDT Wildlife Accomodation Process	N/A	2/14/2019	10/31/2024	\$0
9596-617	Testing Wildlife-Friendly Fencing Modifications to Manage Wildlife and Livestock Movements	N/A	7/19/2021	1/31/2023	\$0
10325-900	Evaluate MDT Electrified Wildlife Deterrent Mats	TBD	TBD	TBD	\$449,550
TBD	Renewable Energy Generation within MDT Right of Way (ROW)	TBD	TBD	TBD	\$110,000

STATUS KEY: Active Completed Implementation Proposed

Geotechnical Research Projects

Project Number	Title	Consultant	Start Date	End Date	Programmed Cost
10119-878	Development of P-Y Curves for Analysis of Laterally Loaded Piles in Montana	Montana State University	4/27/2022	11/30/2026	\$270,000
10118-877	Organization and Analysis of Measurement While Drilling (MWD) Data	Montana Technological University	8/31/2022	10/31/2024	\$116,000

Information Services Research Projects

Project Number	Title	Consultant	Start Date	End Date	Programmed Cost
9922-807	Analyze Business Models for Implementation and Operation of a Statewide GNSS Real-Time Network	Montana State University	2/12/2020	1/31/2023	\$84,000
TBD	Implementation of Electric Vehicle Charging Infrastructure and Its Economic Benefits in Small Urban and Rural Communities	N/A	TBD	TBD	\$166,500

Materials/Data Collection & Analysis Research Projects

Project Number	Title	Consultant	Start Date	End Date	Programmed Cost
9577-607	Alkali-Silica Reactivity in the State of Montana	Montana State University	4/6/2018	11/30/2021	\$73,386 (final cost)
9921-806	Numerical Modeling of the Test Pit for Falling Weight Deflectometer Calibration	Montana State University	11/19/2020	2/28/2022	\$25,990 (final cost)

Safety Research Projects

Project Number		Title	Consultant	Start Date	End Date	Programmed Cost
9832-766		Effectiveness of Highway Safety Public Education at Montana Motor Vehicle Registration Stations by Streaming a Variety of Safety Content	Montana State University	3/15/2020	4/30/2023	\$166,000
9932-820		Safety Evaluation of Sinusoidal Centerline Rumble Strips	Pennsylvania State University	1/19/2022	7/10/2026	\$207,000
8882-444		Traffic Safety Culture Transportation Pooled Fund (TSC-TPF) Program – Phase 2	Montana State University	10/1/2019	9/30/2024	\$952,000
POOLED FUND 8882-444 SUBPROJECTS	8882-444-20	Resources and Tools to Reduce Multi-Risk Driving Behaviors	Montana State University	3/2021	3/2024	\$236,024
	8882-444-21	FFY 2021 Management Support Contract	Montana State University	10/2019	9/2024	\$22,979
	8882-444-22	Resources and Tools to Reduce Multi-Risk Driving Behaviors	Montana State University	5/2022	4/2025	\$268,140
	8882-444-23	Understanding Aggressive Driving and Ways to Reduce It - Phase 1	Montana State University	7/2022	4/2024	\$132,638
	8882-444-19	A Review of Methods to Change Beliefs	Montana State University	3/2021	5/2022	\$74,128
9679-699		Developing a Methodology for Implementing Safety Improvements on Low-Volume Roads in Montana	Montana State University	2/15/2016	11/30/2021	\$70,016 (final cost)
9891-785		Icy Road Forecast and Alert (IcyRoad): Validation and Refinement Using MDT RWIS Data	University of Montana	7/13/2020	5/31/2022	\$81,699 (final cost)

Annual Programs

Title	FFY 2022 Cost
LOCAL TECHNICAL ASSISTANCE PROGRAM	
Montana Local Technical Assistance Program (LTAP)	\$380,000
TRANSPORTATION RESEARCH BOARD SUPPORT	
NCHRP	\$281,132
TRB Core Services Support	\$124,928
AASHTO TECHNICAL SERVICE PROGRAMS	
AASHTO Innovation Initiative	\$6,000
AASHTO re:source (formerly AMRL)	\$26,500
Development of AASHTO Materials Standards	\$10,000
Equipment Management Technical Services Program	\$5,000
Load and Resistance Factor Design Bridges and Structures Specification Maintenance	\$15,000
National Transportation Product Evaluation Program, includes AASHTO Product Evaluation List (APEL)	\$20,000
Transportation System Preservation Technical Services Program	\$20,000
Total Technical Service Program Cost (total includes Indirect Costs):	\$114,000

Transportation Pooled Fund Studies

Title	FFY 2022 Cost
Building Information Modeling (BIM) for Infrastructure - TPF-5(480)	\$30,000
Clear Roads Phase II - TPF-5(353)	\$25,000
Improve Pavement Surface Distress and Transverse Profile Data Collection and Analysis, Phase II - TPF-5(399)	\$15,000
Northwest Passage Phase #4 - TPF-5(376)	\$25,000
Pavement Structural Evaluation with Traffic Speed Deflection Devices (TSDDs) - TPF-5(385)	\$45,000
Technology Transfer Concrete Consortium (FY20-FY24) - TPF-5(437)	\$12,000
Traffic Control Device (TCD) Consortium (3) - TPF-5(447)	\$10,000
Traffic Safety Culture: Phase 2 - TPF-5(309)/(444)	\$25,000
Updating U.S. Precipitation Frequency Estimates for the Northwest - TPF-5(454)	\$133,520
Western Alliance for Quality Transportation Construction (WAQTC) - 2021-2025 TPF-5(476)	\$12,000
Western Maintenance Partnership – Phase 3 - TPF-5(394)	\$5,000

STATUS KEY: Active

Appendix B

Active Experimental Features in MDT Federal Aid Programmed Projects

Montana Department of Transportation
Active Experimental Features

Title	Project Number	District	Experimental Project No.	Project Type	Construction Year	End Date*
I-90 Nemote Creek Culvert	IM 90-1(205)59[8189]	Missoula	MT-13-14	Spraywall Culvert Rehab	2017	2022
Targhee Pass - West Yellowstone	NH 12-1(20)0[8762]	Butte	MT-15-01	Fog Seal over Chip Seal Comparison	2017	2022
Smelter - 1st to 5th NW	UPP 5201(24)[8978]	Great Falls	MT-17-03	Asphalt Paving Geofabric	2017	2022
Jct 508 - East & West	NH1-1(10)0[8956]	Missoula	MT-17-04	Centerline Rumble Strips	2017	2022
Emerson Junction - Manchester	IM 15-5(124)282[7621]	Great Falls	MT-17-05	3/8" Plant Mix Surfacing	2017	2022
Exit 5 - East	IM 90-1(220)6[8954]	Missoula	MT-18-01	Fog Seal over Chip Seal Comparison	2017	2022
Sinusoidal CLRS - Colstrip	UPN 9370	Glendive	MT-18-02	Sinusoidal Centerline Rumble Strips	2018	2023
Division St - Billings	UPPIP 1017(2)7[9003]	Billings	MT-18-03	Asphalt Paving Fiber	2018	2023
Milk River - North	STPP 17-1(10)11[5157]	Glendive	MT-18-05	Base One Soil Stabilization	2018	2023
Dixon - West & Dixon - Ravalli	STPP 6-1(155)99[9239]	Missoula	MT-19-02	Chip Seal Emulsion Comparison	2019	2024
Bridger Canyon	STPP 96-1-55-10[8112]	Butte	MT-19-05	Jointbond Joint Stabilizer	2019	2024
East of Thompson River - East	STPP 6-1(123)57[4039]	Missoula	MT-20-01	Electrified Wildlife Deterrent Mats	2019	2024
Toston Structures	NHIP NHPBIP 8-4(66)86[7668]	Butte	MT-20-01	Electrified Wildlife Deterrent Mats	2021	2026

Title	Project Number	District	Experimental Project No.	Project Type	Construction Year	End Date*
Gildford - East	NH 1-6(123)355[9393]	Great Falls	MT-20-02	Chip Seal Comparison	2020	2025
Valentine Road	ER 35(21)[9745]	Billings	MT-20-03	Flexamat Erosion Control	2020	2025
Conrad - East	STPS 218-1(11)0[9401]	Great Falls	MT-20-04	Crafco Mastic One	2020	2025
MT 200 - Fairview	NHIP 20-2(32)62[8168]	Glendive	MT-20-05	PCCP Bondbreaker	2020	2025
Condon - North & South	STPP 83-1(40)32[9500]	Missoula	MT-20-06	Void Reducing Asphalt Membrane	2020	2025
Townsend - North	NH 8-4(79)68[9470]	Butte	MT-21-02	Diamond Grind Road Smoothing	2021	2026
Bad Route Interchange NE	IM 94-6(59)193[8150]	Glendive	MT-21-04	Aggregate Slope Evaluation	2021	2026
Rouse Ave - Main to Oak	STPP 86-1(27)0[4805]	Butte	MT-21-06	Nomaflex Concrete Joint Filler	2021	2026
Hardin - South	STPS 313-1(17)1[5793]	Billings	MT-21-03	Geogrid Soil Stabilization	2022	2027
SF 139 - Dern/Spring Cr Reconstruct	HSIP-NH-1-2(193)118[8626]	Missoula	MT-21-05	Polymer Overlay on PCCP	2022	2027
Grandview Dr - Reserve Dr	NH 5-3(154)115[9862]	Missoula	MT-22-02 (monitored with MT-18-03)	Asphalt Paving Fiber	2022	2027

* Feature monitoring schedules can be extended or shortened as needed.

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